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The achievement of Myanmar-Japan Pondaung Fossil Expedition Team

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The discovery of primate fossils in Pondaung area in Myanmar began in 1914, when G. de P. Cotter of the Geological Survey of India found some primate fossils from the Pondaung Formation of Eocene age (40 my) near Pangan village in Myaing township. Then in 1923, an English paleontologist G. E. Pilgrim named it *Pondaungia cotteri*. In the same year, Dr. Barnum Brown of the American Museum of Natural History also discovered a fragment of primate's mandible with some molars near Mogaung village in Palé Township. An American paleontologist Edwin H. Colbert named it *Amphipithecus mogaungensis* in 1937.

In 1978, near Mogaung village, the fossilized remains of *Pondaungia cotteri* and *Amphipithecus mogaungensis* were again discovered by two lecturers U Ba Maw and U Thaw Tint of Mandalay University accompanying with the team of field Geology students. However, only some fragments of mandible with about two molars were found in Pondaung area at that time. Due to the scarcity of evidence, the finds were being argued among scholars, and they suggested that complete sets of primate mandible were needed for further identification. There were only some studies on basic of the individual interest and no well-organized exploration of the primate fossils at that time.

In February 1997, Secretary (1) of the State Peace and Development Council, Lieutenant General Khin Nyunt, stated that it was necessary to explore further indisputable evidence that the fossilized remains of anthropoid primates found in Myanmar could be dated as being 40 million years old, in order to have assistance to the studies of human origins. With a view to achieving the objective, Colonel Than Tun, Head of Department of the Office of Strategic Studies, was assigned to form an expedition team with the scholars to explore systemically in Pondaung area. In such a way, the "Pondaung Fossils Expedition Team" has been formed with the officers from Office of Strategic Studies, Ministry of Defence, and with the scholars and demonstrators from Geology Departments of various Universities under Ministry of Education.

After the formation, the team, led by Colonel Than Tun, based at Lekan village,



Figure 1. Colonel Than Tun receives Professor Dr. Nobuo Shigehara and Party.

Mogaung village and Wetkya village in Palé Township, and Bahin village, and Magyikan village in Myaing Township, and conducted six-week-exploration from March 9 to April 21, and also other fossilized leaves and gastropods.

The significant and important fact among the primate fossils discovered in the exploration is that the one found near Bahin village is a full complete set of both lower left and right mandible with a complete set of molars, premolars and incisors of an *Amphipithecus*. The previous one - *Amphipithecus mogaungensis* – was not a complete set of mandible. The newly recovered complete set of mandible, named *Amphipithecus bahinensis* could be proved as a primate. In order to have much more progress in research by some international cooperation, the scholars and researchers on primates from various part of the world were invited. Professor Dr. Nobuo Shigehara and Assistant Professor Dr. Masanaru Takai from the Primate Research Institute of Kyoto University were invited by Colonel Than Tun, Head of Department of the Office of Strategic Studies, to study the latest discovered primates because Dr. Masanaru Takai has been to Myanmar and Colonel Than Tun knows that he is very much interested in the primates found in Myanmar.

Japanese Professor Dr. Nobuo Shigehara and Dr. Masanaru Takai arrived at Myanmar on April 19, 1998. On April 20, they met with the Pondaung Fossils Expedition Team at the Defence Services Guesthouse and were briefed by Colonel Than Tun on matters relating to the National Museum in Yangon and requested to cooperate in the coming Pondaung

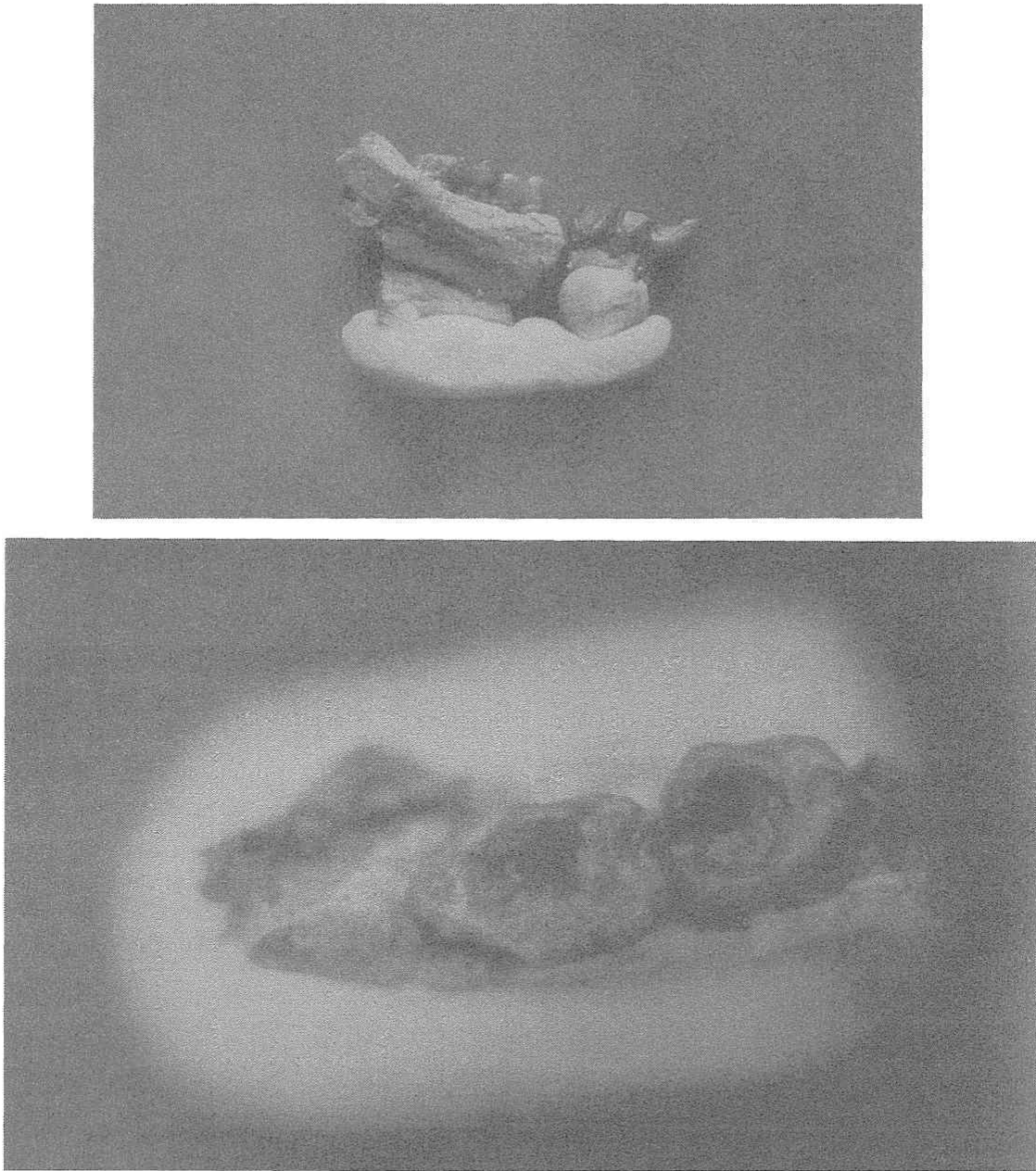


Figure 2. A new primate, NMMP-KU 0001, discovered at Bahin Village in 1998. A lingual view of the mandible (above) and occlusal view of $M_{2,3}$ (below) .

Fossils Expedition process.

Then on November 1, 1998, Dr. Shigehara and other two Japanese fellows came back again and the Myanmar-Japan Joint Pondaung Fossils Expedition team went to Pondaung area to conduct exploration from 5 to 20 November. They also carried out a research on primates at the National Museum from November 22 to December 8. At their first exploration, they collected the fossils including anthropoid primates with associated



Figure 3. A new specimen (NMMP-KU 0003, upper jaw fragments with several teeth) of *Pondaungia cotteri*, which was collected at Pangan Village in 1998.

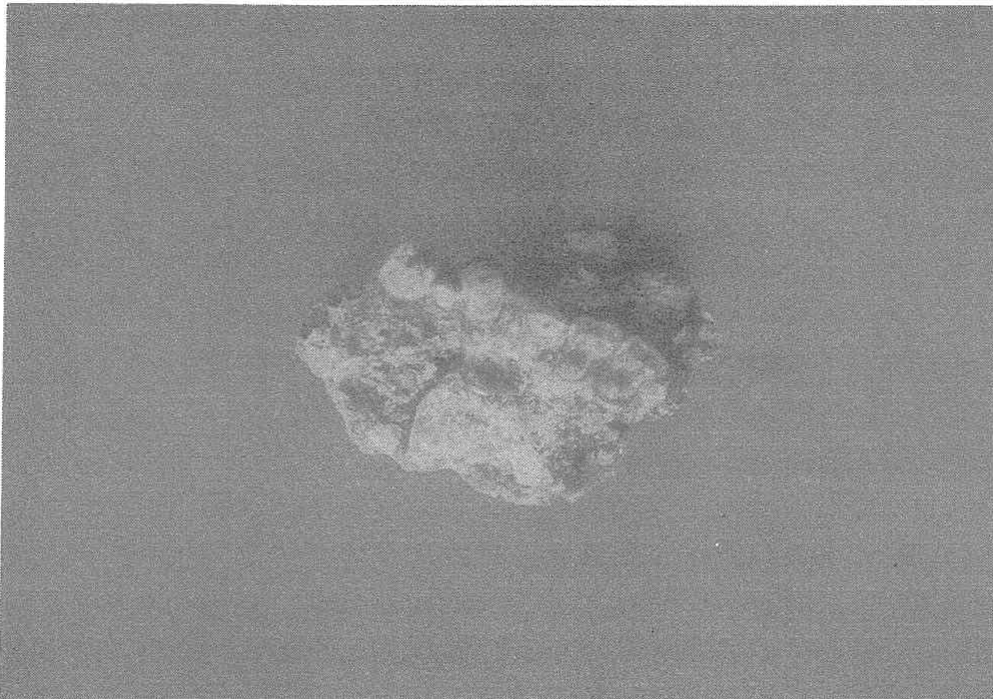


Figure 4. A left maxillary fragment of *Bahinia*, which was discovered at Bahin Village in 1998.

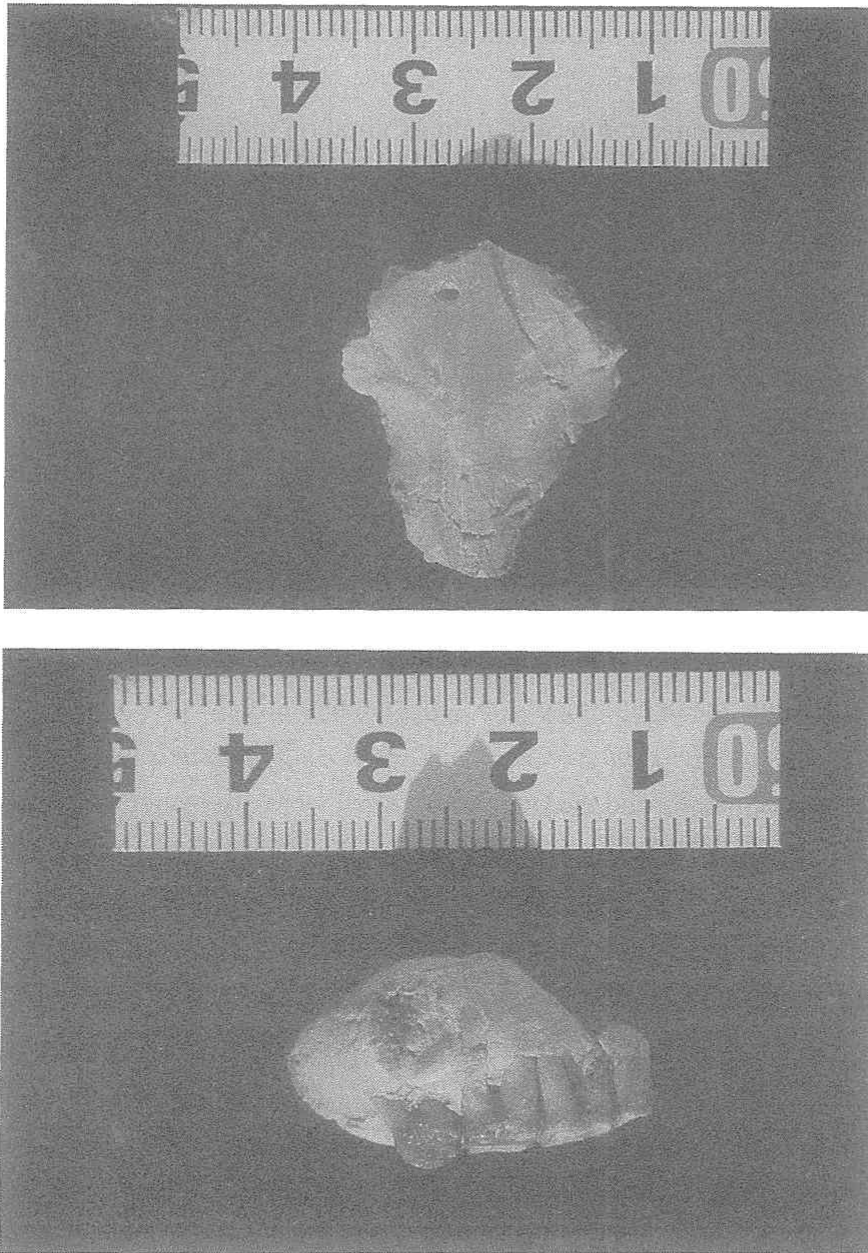


Figure 5. New specimens of *Amphipithecus mogaungensis* (NMMP-KU 0228, 0229), which was discovered at Bahin Village in 1999. Above: a parietal part of the skull bone. Below: buccal view of the right upper jaw

vertebrate fossils. The significant finds among their collection were a left mandibular fragment preserving C_1 - P_3 and $M_{2,3}$ and right maxillary fragments preserving P^4 - M^3 . According to the above – mentioned discovery, an international renowned scientific paper on the new genus of primate will be written.

While the Myanmar-Japan Joint Pondaung Fossils Expedition Team based at Magyikan village was searching in the area, a fragment of primate's left maxilla (I^1 , C, root of P^{2-3} ,

lingual half of P⁴, lingual half of M¹⁻², fragment of M³ with root of zygomatic arch) were recovered. It was the first time that an almost complete set of primate's maxilla was discovered.

The joint team continued the second field exploration in Pale and Myaing townships from 2 to 23 November 1999. Japanese Professor, Dr. Shigehara and three fellows were the members of the team.

As the joint team continued the exploration at the kyitchaungs near Mogaung village in Palé township, and Bahin and Pauk Khaung village in Myaing township, a fragment of maxilla of primate – *Amphipithecus mogaungensis* preserving P⁴,

M¹⁻³ and a piece of skull bone were discovered. This is the first time that maxilla and skull of *Amphipithecus mogaungensis* have been found.

The Myanmar-Japan Joint Pondaung Fossils Expedition team has the new anthropoid primate, which have never been found before and the team has the opportunity to continue further research. Since the beginning of the 20th century, only the incomplete maxilla and mandibles of the *Pondaungia cotteri* and mandibles of *Amphipithecus mogaungensis* have been found. Now the maxilla and the fragment of skull were discovered and the discovery could completely prove that anthropoid primates were living in Pondaung area 40 million years ago. The success achieved by the Myanmar-Japan Joint Pondaung Fossils Expedition is remarkable, and the assistance of the Education Ministry of Japanese Government for the expedition is highly appreciated.